

**REMARKS/ARGUMENTS**

Claims 1-10, 12-23, 25, and 26 remain pending in the application. All pending claims were rejected as allegedly unpatentable over a combination of cited references. Applicant respectfully traverses the rejections and requests reconsideration and allowance of all pending claims.

**Discussion of Rejections Under 35 U.S.C. §103**

Claims 1-2, 5-10 and 12 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable over GB 2,081,543 to Cox (hereinafter Cox) in view of JP 2002/359,543 to Arayashiki (hereinafter Arayashiki). Applicant respectfully traverses the rejection and requests reconsideration and allowance of the claims.

**Claim 1** recites a reconfigurable filter. The reconfigurable filter includes “a switch control module configured to generate a pseudo random switch control signal to control the switch in the configurable element to selectively switch between two filter components, a value of the configurable element based in part on a percentage of time that the switch control signal selectively couples a first of the at least two filter components to another of the plurality of elements.” Cox and Arayashiki, whether alone or in combination, fail to teach or suggest at least this claimed feature.

The Examiner concedes that Cox fails to teach or suggest a switch control module configured to generate a pseudorandom switch control signal. The Examiner states: “Cox does not disclose the switch generate a pseudo random switch control signal based in part on a percentage of time that the switch control signal selectively couples a first of the two filter components to the filter circuit.” *Office Action*, dated April 8, 2008, at page 3.

The Examiner contends that “Arayashiki discloses a filter comprising a switch control module (7) which generates a pseudo random switch control signal based in part on a percentage of time that the switch control signal selectively couples a first of two filter components (1,9) to another of the plurality of elements.” *Id.*

Applicant respectfully traverses the rejection. Arayashiki fails to teach or suggest a switch control module configured to generate a pseudo random switch control signal to control the switch, as claimed.

Arayashiki describes a filter circuit having two distinct filter circuits, filter circuit 1 and filter circuit 9. *See, Arayashiki*, Abstract and Figure 1. Arayashiki also describes a signal switching circuit 3, a signal switching circuit 8, a pseudo-random signal generating circuit 2, and a control circuit 7. *Id.*

From Arayashiki Figure 1, it can be seen that the pseudo-random signal generating circuit 2 is coupled to one port of the signal switching circuit 3. The output from the signal switching circuit 3 is coupled to the input of filter circuit 1. Similarly, the pseudo-random signal generating circuit 2 is coupled to one port of the signal switching circuit 8. The output from the signal switching circuit 8 is coupled to the input of filter circuit 9.

As noted in Arayashiki Abstract, "The control circuit 7 is controlled to input a pseudo random noise separately to the filter circuit 1 and the filter circuit 9." *Id.* The control circuit 7 operates to selectively switch the output from the pseudo random signal generating circuit to the inputs of the filter circuit 1 or filter circuit 9.

Thus, the control circuit 7 does not generate a pseudo random switch control signal. Indeed, the switching circuits 3 and 8 are not even controlled by a pseudo random signal. Instead, the switching circuits 3 and 8 operate to selectively pass pseudo random noise from the pseudo-random signal generating circuit 2 to the inputs of the filter circuit 1 and filter circuit 9.

Arayashiki fails to describe switch control module that generates a pseudo random control signal, and Arayashiki fails to describe any switch that is *controlled* by a pseudo random signal.

Thus, the combination of Arayashiki with Cox fails to cure the deficiencies in Cox conceded by the Examiner. Arayashiki fails to teach or suggest "a switch control module configured to generate a pseudo random switch control signal" and fails to teach or suggest the pseudo random switch control signal "to control the switch in the configurable element to selectively switch between two filter components."

Because both Cox and Arayashiki fail to teach or suggest the same claim element, the combination of Cox with Arayashiki fails to teach or suggest a feature that is absent from each individually. There is no description in either cited reference that can cure the absence of the claimed element.

Thus, claim 1 is believed to be allowable at least for the reason that Cox and Arayashiki, whether alone or in combination, fail to teach or suggest every claimed feature. Applicant respectfully requests reconsideration and allowance of claim 1.

Claim 20 was rejected under 35 U.S.C. 102(b) as allegedly anticipated by Cox in view of U.S. Patent No. 6,351,229 to Wang. Applicant respectfully traverses the rejection.

In order for a claim to be anticipated, *a single prior art reference* must describe, either expressly or inherently, each and every element as set forth in the claim. The Examiner fails to allege that all claim features are described in a single prior art reference. Indeed, the Examiner concedes that Cox fails to describe every claim element and does not allege that Wang describes every claimed element. *See, Office Action*, at page 5. Applicant respectfully requests withdrawal of the rejection of the claim as anticipated.

The combination of Cox with Wang further fails to establish a *prima facie* case of obviousness. The combination of references fails to teach or suggest every claimed feature.

Claim 20 recites a reconfigurable filter. The reconfigurable filter includes "at least one configurable element having a value based in part on a fractional period in which a control signal is at a first signal level. The claim further includes "a delta sigma modulator configured to generate a pseudo random output as the control signal, the delta sigma modulator including a variable voltage source, and an output of the variable voltage source controlling a distribution of first and second signal levels output by the delta sigma modulator."

The Examiner concedes that Cox fails to teach or suggest the use of a delta sigma modulator to control at least one reconfigurable element. *See, Office Action*, at page 5. The Examiner cites to Wang as teaching a delta sigma modulator. However, the mere description of delta sigma modulator is insufficient to teach or suggest the particular configuration claimed in claim 20.

The Examiner contends that it is obvious to one of ordinary skill in the art to include the delta sigma modulator in order to have a specific type of generator to generate a pseudo random control signal.

However, the Examiner provides no rational basis or reasoned argument for the proposed modification of Cox with Wang. The Examiner cites generally to over three columns from Wang as supporting the argument, and fails to particularly point out any specific portion from Wang that even hints at the proposed modification to Cox.

Wang does not describe the delta sigma modulator in the context of a switch control or in the context of a reconfigurable filter. In stark contrast, Wang describes a delta sigma modulator in the context of a one-bit DAC.

Moreover, Wang fails to teach or suggest a variable voltage source as part of the delta sigma modulator.

Cox describes a filter but does not teach or suggest any use of a pseudo random control signal. Wang teaches a one-bit DAC. Neither reference describes a variable voltage source that controls a reconfigurable filter. There is nothing in the teachings of the cited references that teaches or suggests the claimed reconfigurable filter or that teaches or suggests the inclusion of an element absent from both references.

Claim 20 is believed to be allowable at least for the reason that Cox and Wang, whether alone or in combination, fail to teach or suggest every claimed feature. Applicant respectfully requests reconsideration and allowance of claim 20.

Claims 3, 4, and 25 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Cox in view of Arayashiki and in view of U.S. Patent No. 6,975,846 to Chang (hereinafter Chang). Applicant respectfully traverses the rejection.

**Claim 25** recites an RF integrated circuit. The RF integrated circuit includes “a switch control module configured to generate a switch control signal comprising a pseudo random bit sequence to control the switch in the configurable element to selectively switch between two filter components, a value of the configurable element based in part on the switch control signal.” The cited references, whether alone or in combination, fail to teach or suggest at least this claimed feature.

The Examiner concedes that Cox fails to teach or suggest the switch control module configured to generate a switch control signal comprising a pseudo random bit sequence. The Examiner further does not contend that Chang teaches or suggests this claimed feature. Instead, the Examiner alleges Arayashiki teaches or suggests this claimed feature.

As discussed above in relation to the analysis of claim 1, Arayashiki fails to teach or suggest the claimed feature and fails, generally to describe any pseudo random switch control module or a switch control signal comprising a pseudo random bit sequence.

Applicant respectfully requests reconsideration and allowance of claim 25, because the 4 cited references, whether alone or in combination, fail to teach or suggest every claimed feature.

**Claim 21** was rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Cox in view of Arayashiki. Claim 21 includes the feature of "selectively switching between the first switch configuration and the second switch configuration based on a pseudo random switching signal that controls the switches to the first switch configuration for the fractional switching time." This claimed feature is similar to the feature discussed above in relation to claim 1. Thus, claim 21 is believed to be allowable over Cox and Arayashiki, either alone or in combination, for at least the reasons presented above in relation to claim 1.

**Claim 13** includes features similar to those discussed above in relation to claims 1 and 21 and is believed to be allowable at least for the reasons presented with respect to claims 1 and 21.

**Claim 26** was rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Cox in view of Chang and U.S. Patent Application Publication No. 2004/0196934 to Petrov et al. (hereinafter Petrov) and further in view of Arayashiki..

Claim 26 includes the feature of "a baseband processor coupled to the output of the demodulator and configured to generate a mode select signal that controls, in part, the fractional period in which the pseudo random control signal is at the first signal level."

In a manner similar to the rejection of claim 1, the Examiner alleges Arayashiki teaches the pseudo random control signal. As previously discussed in relation to claim 1,

Arayashiki fails to teach or suggest such a feature. The remaining references fail to cure the deficiencies in Arayashiki.

Claim 26 is believed to be allowable over Cox, Chang, Petrov, and Arayashiki, either alone or in combination, for at least the reasons presented above in relation to claim 1. The Chang and Petrov references fail to cure deficiencies in Cox and Arayashiki.

**Claim 18** was rejected under 35 U.S.C. §103(a) as allegedly unpatentable over U.S. Patent No. 6,329,939 to Swaminithan et al. (hereinafter Swaminithan) in view of Cox in view of admitted prior art and further in view of Arayashiki.

Applicant is unsure as to what alleged admitted prior art the Examiner is basing the rejection. Applicant is unaware of any admitted prior art and respectfully requests the Examiner particularly identify that portion that Examiner believes is admitted prior art. To the extent that the Examiner is taking judicial notice, Applicant respectfully request that the Examiner provide a citation to a prior art document to support the allegations for which judicial notice is being taken.

**Claim 18** includes features similar to those discussed above in relation to claims 1, 13, and 21 and is believed to be allowable at least for the reasons presented with respect to claims 1, 13, and 21.

#### **Discussion of Dependent Claims**

Each of claims 2-10, 12, 14-17, 19 and 22-23 depend, either directly or indirectly, from one of independent claims 1, 13, 18, or 21 and are believed to be allowable at least for the reason that they depend from an allowable base claim.

Each of the dependent claims may have individual bases for patentability beyond those discussed above in relation to the independent claims. It is not necessary to discuss the patentable distinctions of each dependent claim because of the allowability of the base claims from which they depend.

**CONCLUSION**

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

Applicant petitions the Director of the United States Patent Office to extend the time for reply to the Office Action dated April 8, 2008 for three-months and authorizes the charge as set forth in §1.17(a) to Deposit Account No. 20-1430. Applicant believes that the instant response is filed within the period for response provided in the Office Action of April 8, 2008 extended by three-months as provided for under 37 CFR 1.136.

If there are any other fees due in connection with the filing of the response, please charge the fees to our Deposit Account No. 20-1430. If a fee is required for an extension of time under 37 CFR 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 858-350-6100.

Respectfully submitted,



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